PATENT

Attorney Docket No. SIC-00-001-4

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re application of:
KENJI OSE
Application No.: 09/992,597
Filed: November 14, 2001
For: SWITCH STYLE BICYCLE SHIFT CONTROL DEVICE

Examiner: Chong Hwa Kim
Art Unit: 3682

APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Commissioner:

This is a corrected appeal brief submitted in response to the Notice of Non-Compliant Appeal Brief dated June 8, 2006.

I. Real Party In Interest

The assignee and real party in interest is Shimano, Inc., a Japanese corporation having a principal place of business in Osaka, Japan.

II. Related Appeals And Interferences

There are no prior or pending appeals, interferences or judicial proceedings known to the appellant, to appellant's legal representative, or to the assignee which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

III. Status Of Claims

Claims 34-37, 40, 41, 43-47, 49-55, 61-65, 73 and 74 are pending under final rejection and are under appeal. Claims 1-33, 38-39, 42, 48, 56-60 and 66-72 have been canceled.

IV. Status Of Amendments

No amendment was filed subsequent to final rejection.

V. Summary Of Claimed Subject Matter

An embodiment of the claimed subject matter is shown in Figs. 13-15 and described at pages 13 and 14 of the patent application. As applied to that embodiment, the subject matter recited in independent claim 34 is directed to a bicycle shift control device (500, Fig. 13) comprising:

a base member (504) (page 13, line 22);

an attachment band (508), (page 13, line 23) extending from the base member, wherein the attachment band (508) is structured to surround a handlebar (e.g., (12), Fig. 1);

a rotatable dial (512) (page 13, line 23) coupled to the base member (504) for rotation coaxially around a rotational axis (A) (page 14, lines 1-2), wherein the rotatable dial (512) is exposed to the outside as shown in Fig. 13;

wherein the rotatable dial is not structured to surround handlebar (12) so as to rotate coaxially around the handlebar (12);

a motion limiting structure (537, 582) or (537; 583) (Figs. 14-15) coupled to the base member and to the rotatable dial that limits a range of rotation of the rotatable dial (512) relative to the base member (504) to a predefined arc as described at page 14, lines 15-19;

a finger contact projection (584) extending from the rotatable dial (512) in a direction of the rotational axis as described at page 14, lines 4-5;

wherein the finger contact projection (584) is structured to prohibit the extension of a finger between all portions of the finger contact projection and the rotatable dial as shown in Fig. 13;

wherein the finger contact projection (584) is structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact

projection (584) such that the rotational axis is sandwiched between the two fingers or the finger and the thumb (this should be readily apparent from Figs. 13-15);

wherein the finger contact projection (584) protrudes radially inwardly from a radially innermost outer peripheral surface of the dial (the circular surface shown in Figs. 13-15) so that the shift control device is operated by grasping the finger contact projection with the two fingers or the finger and the thumb radially inwardly from the radially innermost outer peripheral surface (this should be readily apparent from Figs. 13-15);

wherein the finger contact projection extends in close proximity to the rotational axis (this should be readily apparent from Fig. 13);

a shift element coupler (595) (Fig. 13) disposed with the rotatable dial (512); and

wherein the finger contact projection (584) is coupled to the rotatable dial (512) so that rotation of the finger contact projection (584) correspondingly rotates the rotatable dial (512) to move the shift element coupler (595) and thereby operate the shift control device.

Furthermore, as applied to that embodiment, the subject matter recited in independent claim 73 is directed to a bicycle shift control device (500, Fig. 13) comprising:

a base member (504) (page 13, line 22);

a rotatable dial (512) (page 13, line 23) coupled to the base member (504) for rotation coaxially around a rotational axis (A) (page 14, lines 1-2), wherein the rotatable dial (512) is exposed to the outside as shown in Fig. 13;

wherein the rotatable dial is not structured to surround handlebar (12) so as to rotate coaxially around the handlebar (12);

a motion limiting structure (537, 582) or (537; 583) (Figs. 14-15) coupled to the base member and to the rotatable dial that limits a range of rotation of the rotatable dial (512) relative to the base member (504) in at least one of a clockwise and a counterclockwise direction as described at page 14, lines 15-19;

a finger contact projection (584) extending from the rotatable dial (512) in a direction of the rotational axis as described at page 14, lines 4-5;

wherein the finger contact projection (584) is structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact

projection (584) such that the rotational axis is sandwiched between the two fingers or the finger and the thumb (this should be readily apparent from Figs. 13-15), and the two fingers or the finger and the thumb abut against the rotatable dial (at the surface pointed to by the leas line for reference numeral (570)) in a direction of the rotational axis when the two fingers or the finger and the thumb press in the direction of the rotational axis (this also should be readily apparent from Figs. 13-15);

a shift element coupler (595) (Fig. 13) disposed with the rotatable dial (512); and

wherein the finger contact projection (584) is coupled to the rotatable dial (512) so that rotation of the finger contact projection (584) correspondingly rotates the rotatable dial (512) to move the shift element coupler (595) and thereby operate the shift control device.

VI. Grounds Of Rejection To Be Reviewed On Appeal

Claims 34-37, 43-47, 49-52, 73 and 74 stand rejected under 35 U.S.C. §102(b) as being anticipated by Higuchi (WO 92/19488).

Claims 34-37, 40, 41, 44, 49-51, 53, 61-65, 73 and 74 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wechsler (US 3,965,763) in view of Higuchi and Knop (US 3,766,793).

Claims 54 and 55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Wechsler in view of Higuchi and White (US 3,398,600).

VII. Arguments

Rejection under 35 U.S.C. §102(b) over Higuchi

Claims 34-37, 43-47, 49-52, 73 and 74.

Independent claims 34 and 73 contain the feature that the finger contact projection is structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact projection such that the rotational axis is sandwiched between the two fingers or the finger and the thumb. Higuchi discloses a shift control device (5, Fig. 1) wherein a wire winding element (9, Fig. 3) winds a shift control wire (W2) around a rotational axis at (7) shown in Fig. 1. A forked operating lever (8, Fig. 4) extends from wire winding element

(9). Operating lever (8) has a first portion (10) that extends radially outwardly from wire winding element (9), and forked portions (10a) and (10b) that extend from a distal end of first portion (10). The rider grasps the handlebar (1) as shown in Fig. 1. The ordinary method of using the device is to contact one of the forked portions (10a) or (10b) with the thumb and/or finger. Clearly, the rotational axis at (7) would not be sandwiched between the thumb and a finger in that position.

The office action refers to wire winding element (9) as a rotatable dial and states at page 9, last paragraph, that "it is possible to use the thumb and the index fingers to wrap around the dial portion (9) and engage the thumb on one side of the finger contact projection (8) and the index finger on the other side of the projection (8), thus positioning the rotational axis sandwiched between the two fingers."

Claim 34 requires the finger contact projection to protrude radially inwardly from a radially innermost outer peripheral surface of the dial so that the shift control device is operated by grasping the finger contact projection with the two fingers or the finger and the thumb radially inwardly from the radially innermost outer peripheral surface. By contrast, projection (8) in Higuchi projects radially outwardly from the wire winding element" (9), so claim 34 is not met for that reason as a minimum.

Claim 73 requires the finger contact projection to be structured such that the two fingers or the finger and the thumb abut against the rotatable dial in a direction of the rotational axis when the two fingers or the finger and the thumb press in the direction of the rotational axis. Since projection (8) extends radially outwardly from wire winding element (9), no portion of projection (8) is located such that the fingers or thumb could abut against wire winding element (9) when grasping projection (8), not to mention the fact that housing (6b) and the attachment screw assembly (18, 19) cover wire winding element (9) as shown in Fig. 3 of Higuchi, thereby preventing such contact in any event.

Furthermore, there is no *evidence* that the Higuchi device even has the capability to be used in the manner suggested by the office action. While it is true that the scope of what is taught by a prior art apparatus extends to the apparatus itself and the obvious methods of use suggested by the structure of that apparatus, an odd use of a prior art structure is not sufficient to show that a claimed

structure is taught by the prior art. In re Robertson 169 F.3d 743, 745; 49 USPQ.2d 1949, 1951 (Fed.Cir. 1999)

Rejection under 35 U.S.C. §103(a) over Wechsler in view of Higuchi and Knop.

Claims 34-37, 40, 41, 44, 49-51, 53, 61-65, 73 and 74.

Claim 34 recites the finger contact projection protruding radially inwardly from a radially innermost outer peripheral surface of the dial so that the shift control device is operated by grasping the finger contact projection with the two fingers or the finger and the thumb radially inwardly from the radially innermost outer peripheral surface. Claim 74 recites the finger contact projection being structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact projection such that the rotational axis is sandwiched between and adjacent to the two fingers or the finger and the thumb and the two fingers or the finger and the thumb abut against the rotatable dial in a direction of the rotational axis when the two fingers or the finger and the thumb press in the direction of the rotational axis.

Wechsler discloses a bicycle gear shift control device wherein a drum (22) includes radially outwardly extending knobs (32). To rotate drum (22), the thumb and fingers are distributed around drum (22), wherein each thumb/finger is sandwiched between a corresponding adjacent pair of radially outwardly extending knobs (32).

Knop discloses a dial with a finger contact projection that protrudes radially inwardly from a radially innermost outer peripheral surface. The office action states at page 8 that it would be obvious to modify the dial of Wechsler with knop's finger contact projection in order to provide a more ergonomic knob that can be turned with more ease.

The mere fact that the prior art could be modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. In re Laskowski, 871 F.2d 115; 10 USPQ.2d 1397 (Fed.Cir. 1989). More importantly, there must be some logical reason apparent from positive, concrete evidence of record which justifies a suggestion to modify a prior art structure. See In re Regel, 526 F.2d, 1399; 188 USPQ 136, 139 (CCPA 1975). The motivation to

combine must be clear and particular, and it must be supported by actual evidence. Teleflex, Inc. v. Ficosa North America Corp., 299 F.3d 1313; 63 USPQ.2d 1374, 1387 (Fed.Cir. 2002). Also, a rejection based on Section 103 must rest on a factual basis, with the facts being interpreted without hindsight reconstruction of the invention from the prior art. In making this evaluation, the examiner has the initial duty of supplying the factual basis for the rejection he advances. He or she may not, because he or she doubts that the invention is patentable, resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies in the factual basis. Ex parte Haymond, 41 USPQ2d 1217 (BdPatApp&Int 1996).

The basic assertion that the motivation to combine the teachings of the references comes from a desire "to provide a more ergonomic knob that can be turned with more ease" does not meet this test. There is no basis to make such an assertion. Indeed, the proposed modification would completely change the mode of operation of the Wechsler device. As noted above, Wechsler's drum is rotated by distributing the thumb and fingers around the drum (22) between the radially outwardly extending knobs (32), whereas the proposed modification would operate like Knop's dial with only one finger and thumb rotating the dial. The proposed modification also would reduce the number of contact surfaces by eliminating all fingers except the one finger and thumb used to contact the Knop-style projection, and also would decrease the mechanical advantage to rotate Wechsler's drum (22) because the thumb/finger would be located closer to the rotational axis. This would be especially undesirable given the significant rotational resistance inherent in the Wechsler endless cable system (See Fig. 2).

Rejection under 35 U.S.C. §103(a) over Wechsler in view of Higuchi and White.

Claims 54 and 55.

White discloses a motion transmitting remote control assembly wherein a terminal (22) includes a resilient snap-in means (28) with tapered elements (32) spaced apart by a slot (34). The office action states at page 9 that it would be obvious to use White's snap-in means (28) in the Wechsler device "in order to provide a simpler design wherein the tolerances between the projection and the receiving end need not be accurately controlled ... so that the cost of manufacturing can be

reduced." However, while such a benefit may accrue in White's cable assembly (10), there is no evidence that there would be any benefit to such a structure when applied to the *Wechsler* device. For example, White's terminal (22) is not used for rotation, and Wechsler requires a strong structure for drum (22) because of the significant effort required to operate the endless cable system disclosed therein. It is equally likely that White's tapered elements (32) would simply shear off if applied to the Wechsler drum (22).

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VIII. CLAIMS APPENDIX

CLAIM 34. A bicycle shift control device comprising:

a base member;

an attachment band extending from the base member, wherein the attachment band is structured to surround a handlebar;

a rotatable dial coupled to the base member for rotation coaxially around a rotational axis, wherein the rotatable dial is exposed to the outside;

wherein the rotatable dial is not structured to surround a handlebar so as to rotate coaxially around the handlebar;

a motion limiting structure coupled to the base member and to the rotatable dial that limits a range of rotation of the rotatable dial relative the base member to a predefined arc;

a finger contact projection extending from the rotatable dial in a direction of the rotational axis;

wherein the finger contact projection is structured to prohibit the extension of a finger between all portions of the finger contact projection and the rotatable dial;

wherein the finger contact projection is structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact projection such that the rotational axis is sandwiched between the two fingers or the finger and the thumb;

wherein the finger contact projection protrudes radially inwardly from a radially innermost outer peripheral surface of the dial so that the shift control device is operated by grasping the finger contact projection with the two fingers or the finger and the thumb radially inwardly from the radially innermost outer peripheral surface;

wherein the finger contact projection extends in close proximity to the rotational axis;

a shift element coupler disposed with the rotatable dial; and

wherein the finger contact projection is coupled to the rotatable dial so that rotation of the finger contact projection correspondingly rotates the rotatable dial to move the shift element coupler and thereby operate the shift control device.

CLAIM 35. The device according to claim 34 wherein the finger contact projection extends at least partially in a direction perpendicular to the rotational axis.

CLAIM 36. The device according to claim 34 wherein at least one of the dial and the base member includes a coupling projection for coupling the dial to the base member.

CLAIM 37. The device according to claim 36 wherein the coupling projection is disposed on the dial and extends into an opening in the base member.

CLAIM 40. The device according to claim 34 wherein the rotatable dial and the finger contact projection are one piece.

CLAIM 41. The device according to claim 34 wherein the base member includes a cable guide having a cable guide opening for receiving a cable therethrough.

CLAIM 43. The device according to claim 34 wherein the attachment band includes a first mounting hole that aligns with a second mounting hole.

CLAIM 44. The device according to claim 34 wherein the shift element coupler is attached to the rotatable dial.

CLAIM 45. The device according to claim 44 wherein the shift element coupler is fitted within a coupler bore formed in the rotatable dial.

CLAIM 46. The device according to claim 44 wherein the shift element coupler includes cable end bead receiving opening.

CLAIM 47. The device according to claim 46 wherein the shift element coupler has a substantially cylindrical shape, and wherein the cable end bead receiving opening extends diametrically through the shift element coupler.

CLAIM 49. The device according to claim 34 wherein the motion limiting structure comprises a motion stop that cooperates with a first limit stop and a second limit stop.

CLAIM 50. The device according to claim 49 wherein the motion stop extends from the base member.

CLAIM 51. The device according to claim 50 wherein the first limit stop and the second limit stop are disposed on the rotatable dial.

CLAIM 52. The device according to claim 51 wherein the rotatable dial includes a motion limiting groove that forms the first limit stop and the second limit stop.

CLAIM 53. The device according to claim 34 wherein the finger contact projection comprises:

a first finger contact surface facing in a direction substantially perpendicular to the rotational axis, wherein the first finger contact surface at least partially forms a continuous surface with the rotatable dial;

a second finger contact surface facing in a direction substantially perpendicular to the rotational axis and opposite the first finger contact surface, wherein the second finger contact surface at least partially forms a continuous surface with the rotatable dial.

CLAIM 54. The device according to claim 37 wherein the coupling projection includes a slot that allows the coupling projection to be compressed.

CLAIM 55. The device according to claim 54 wherein the coupling projection includes a locking abutment facing the rotatable dial for locking the rotatable dial to the base member.

CLAIM 61. The device according to claim 34 wherein the finger contact projection extends across substantially an entire diameter of the dial.

CLAIM 62. The device according to claim 34 wherein the finger contact projection extends through the rotational axis.

CLAIM 63. The device according to claim 62 wherein the finger contact projection extends diametrically across substantially an entire diameter of the dial.

CLAIM 64. The device according to claim 34 wherein the finger contact projection extends from a surface of the dial that is generally perpendicular to the rotational axis.

CLAIM 65. The device according to claim 34 wherein the finger contact projection extends from an outer portion of the dial towards the rotational axis.

CLAIM 73. A bicycle shift control device comprising:

a base member;

a rotatable dial coupled to the base member for rotation coaxially around a rotational axis, wherein the rotatable dial is exposed to the outside;

wherein the rotatable dial is not structured to surround a handlebar so as to rotate coaxially around the handlebar;

a motion limiting structure coupled to the base member and to the rotatable dial that limits a range of rotation of the rotatable dial relative the base member in at least one of a clockwise and a counterclockwise direction;

a finger contact projection extending from the rotatable dial in a direction of the rotational axis;

wherein the finger contact projection is structured such that the shift control device is operated by placing two fingers or a finger and a thumb on opposite sides of the finger contact projection such that the rotational axis is sandwiched between and adjacent to the two fingers or the finger and the thumb and the two fingers or the finger and the thumb abut against the rotatable dial in a direction of the rotational axis when the two fingers or the finger and the thumb press in the direction of the rotational axis;

a shift element coupler disposed with the rotatable dial; and

wherein the finger contact projection is coupled to the rotatable dial so that rotation of the finger contact projection correspondingly rotates the rotatable dial to move the shift element coupler and thereby operate the shift control device.

CLAIM 74. The device according to claim 34 wherein the attachment band has a substantially cylindrical shape.

IX. EVIDENCE APPENDIX

None

X. RELATED PROCEEDINGS APPENDIX

None